

### **REMARKS**

Claims 1-49 were originally filed in the present application. No claims are currently canceled or added. Consequently, claims 1-49 remain pending in the present application.

Reconsideration of the present application in light of the above amendments and the following remarks is respectfully requested.

#### **Rejections under 35 U.S.C. §102(e)**

Claims 1, 5, 8-12, and 44 were rejected under 35 U.S.C. §102(e) as being anticipated by Ouyang. However, submitted herewith is a signed declaration from inventors Shui-Ming Cheng, Ka-Hing Fung, Kuan Lun Cheng, and Yi-Ming Sheu, establishing invention and reduction to practice of the presently claimed subject matter prior to the filing date of Ouyang.

Consequently, Ouyang is disqualified as a §102(e) reference. Accordingly, Applicants respectfully request the Examiner withdraw the §102(e) rejection of claims 1, 5, 8-12, and 44.

It is noted that the inventors' declaration submitted herewith was previously submitted without the redacted copy of the TSMC Invention Disclosure form referred to in the declaration. Applicants appreciate the Examiner providing notice of this inadvertent error.

#### **Rejections under 35 U.S.C. §102(e)**

##### **Claim 1: Bohr**

Claims 1, 5-9, 11, 12 and 15 were rejected under 35 U.S.C. §102(e) as being anticipated by Bohr. The PTO provides in MPEP §2131 that, to anticipate a claim, a reference must teach every element of the claim. Therefore, to sustain this rejection with respect to claim 1, Bohr must contain all of the elements of claim 1. However, Bohr does not disclose an NMOS device and a PMOS device each located partially over a surface of a substrate, wherein a first one of the NMOS and PMOS devices includes first source/drain regions recessed within the surface, and wherein a second one of the NMOS and PMOS devices includes second source/drain regions extending from the surface. In contrast, Bohr discloses that the source/drain regions of one of the NMOS and PMOS devices is flush with the surface of the substrate, such that it is neither

recessed within the substrate surface nor extending from the substrate surface. Accordingly, the §102(e) rejection of claim 1 and its dependent claims is not supported by Bohr. Consequently, Applicants respectfully request the Examiner withdraw the rejection.

Claim 38: Bohr

Claims 38, 39, 42 and 43 were also rejected under 35 U.S.C. §102(e) as being anticipated by Bohr. However, Bohr does not disclose an NMOS device and a PMOS device each located partially over a surface of a substrate, wherein a first one of the NMOS and PMOS devices includes first source/drain regions comprising SiC, and wherein a second one of the NMOS and PMOS devices includes second source/drain regions comprising SiGe. In contrast, Bohr discloses that the source/drain regions of one of the NMOS and PMOS devices can comprise either SiC or SiGe, and fails to disclose that the source/drain regions of the other NMOS or PMOS device can comprise the other of SiC or SiGe. That is, for example, if Bohr's NMOS device includes source/drain regions comprising SiC, Bohr fails to disclose that the corresponding PMOS device can simultaneously including source/drain regions comprising SiGe. Similarly, if Bohr's NMOS device includes source/drain regions comprising SiGe, Bohr fails to disclose that the corresponding PMOS device includes source/drain regions comprising SiC. Accordingly, the §102(e) rejection of claim 38 and its dependent claims is not supported by Bohr. Consequently, Applicants respectfully request the Examiner withdraw the rejection.

Claim 44: Bohr

Claim 44 was also rejected under 35 U.S.C. §102(e) as being anticipated by Bohr. However, Bohr does not disclose an NMOS device and a PMOS device each located partially over a surface of a substrate, wherein a first one of the NMOS and PMOS devices includes first source/drain regions recessed within the surface, and wherein a second one of the NMOS and PMOS devices includes second source/drain regions extending from the surface. In contrast, Bohr discloses that the source/drain regions of one of the NMOS and PMOS devices is flush with the surface of the substrate, such that it is neither recessed within the substrate surface nor

extending from the substrate surface. Accordingly, the §102(e) rejection of claim 44 is not supported by Bohr. Consequently, Applicants respectfully request the Examiner withdraw the rejection.

Claim 16: Dawson

Claims 16, 17 and 24 were rejected under 35 U.S.C. §102(b) as being anticipated by Dawson. However, Dawson does not disclose an NMOS device and a PMOS device each located partially over a surface of a substrate, wherein a first one of the NMOS and PMOS devices includes first source/drain regions recessed within the substrate, and wherein a second one of the NMOS and PMOS devices includes second source/drain regions extending from the substrate. In contrast, Dawson discloses that the source/drain regions of the NMOS and PMOS devices are flush with the substrate, such that neither are recessed within the substrate nor extending from the substrate. Accordingly, the §102(b) rejection of claim 16 and its dependent claims is not supported by Dawson. Consequently, Applicants respectfully request the Examiner withdraw the rejection.

Claim 28: Dawson

Claims 28 and 35 were also rejected under 35 U.S.C. §102(b) as being anticipated by Dawson. However, Dawson does not disclose an NMOS device and a PMOS device each located partially over a surface of a substrate, wherein a first one of the NMOS and PMOS devices includes first source/drain regions recessed within the substrate, and wherein a second one of the NMOS and PMOS devices includes second source/drain regions extending from the substrate. In contrast, Dawson discloses that the source/drain regions of the NMOS and PMOS devices are flush with the substrate, such that neither are recessed within the substrate nor extending from the substrate. Accordingly, the §102(b) rejection of claim 28 and its dependent claims is not supported by Dawson. Consequently, Applicants respectfully request the Examiner withdraw the rejection.

**Rejections Under 35 U.S.C. §103****Ouyang in view of Dawson**

Claims 2-4, 13, 14, 16-18, 21-26, 28, 29, 32-36, 45 and 46 were rejected under 35 U.S.C. §103 as being unpatentable over Ouyang in view of Dawson. However, submitted herewith is a signed declaration from inventors Shui-Ming Cheng, Ka-Hing Fung, Kuan Lun Cheng, and Yi-Ming Sheu, establishing invention and reduction to practice of the presently claimed subject matter prior to the filing date of Ouyang. Consequently, Ouyang is disqualified as a §103 reference. Accordingly, Applicants respectfully request the Examiner withdraw the §103 rejection of claims 2-4, 13, 14, 16-18, 21-26, 28, 29, 32-36, 45 and 46.

**Ouyang in view of Yeo**

Claims 6, 7, 38, 39 and 42 were rejected under 35 U.S.C. §103 as being unpatentable over Ouyang in view of Yeo. However, submitted herewith is a signed declaration from inventors Shui-Ming Cheng, Ka-Hing Fung, Kuan Lun Cheng, and Yi-Ming Sheu, establishing invention and reduction to practice of the presently claimed subject matter prior to the filing date of Ouyang. Consequently, Ouyang is disqualified as a §103 reference. Accordingly, Applicants respectfully request the Examiner withdraw the §103 rejection of claims 6, 7, 38, 39 and 42.

**Ouyang in view of Yeo and Dawson**

Claims 19, 20, 30, 31, 40 and 41 were rejected under 35 U.S.C. §103 as being unpatentable over Ouyang in view of Yeo and Dawson. However, submitted herewith is a signed declaration from inventors Shui-Ming Cheng, Ka-Hing Fung, Kuan Lun Cheng, and Yi-Ming Sheu, establishing invention and reduction to practice of the presently claimed subject matter prior to the filing date of Ouyang. Consequently, Ouyang is disqualified as a §103 reference. Accordingly, Applicants respectfully request the Examiner withdraw the §103 rejection of claims 19, 20, 30, 31, 40 and 41.

Ouyang in view of Okumura

Claim 47 was rejected under 35 U.S.C. §103 as being unpatentable over Ouyang in view of Okumura. However, submitted herewith is a signed declaration from inventors Shui-Ming Cheng, Ka-Hing Fung, Kuan Lun Cheng, and Yi-Ming Sheu, establishing invention and reduction to practice of the presently claimed subject matter prior to the filing date of Ouyang. Consequently, Ouyang is disqualified as a §103 reference. Accordingly, Applicants respectfully request the Examiner withdraw the §103 rejection of claim 47.

Ouyang in view of Okumura and Dawson

Claims 48 and 49 were rejected under 35 U.S.C. §103 as being unpatentable over Ouyang in view of Okumura and Dawson. However, submitted herewith is a signed declaration from inventors Shui-Ming Cheng, Ka-Hing Fung, Kuan Lun Cheng, and Yi-Ming Sheu, establishing invention and reduction to practice of the presently claimed subject matter prior to the filing date of Ouyang. Consequently, Ouyang is disqualified as a §103 reference. Accordingly, Applicants respectfully request the Examiner withdraw the §103 rejection of claims 48 and 49.

Ouyang in view of Shimizu

Claim 15 was rejected under 35 U.S.C. §103 as being unpatentable over Ouyang in view of Shimizu. However, submitted herewith is a signed declaration from inventors Shui-Ming Cheng, Ka-Hing Fung, Kuan Lun Cheng, and Yi-Ming Sheu, establishing invention and reduction to practice of the presently claimed subject matter prior to the filing date of Ouyang. Consequently, Ouyang is disqualified as a §103 reference. Accordingly, Applicants respectfully request the Examiner withdraw the §103 rejection of claim 15.

Ouyang in view of Dawson and Shimizu

Claims 27 and 37 were rejected under 35 U.S.C. §103 as being unpatentable over Ouyang in view of Dawson and Shimizu. However, submitted herewith is a signed declaration from inventors Shui-Ming Cheng, Ka-Hing Fung, Kuan Lun Cheng, and Yi-Ming Sheu, establishing

invention and reduction to practice of the presently claimed subject matter prior to the filing date of Ouyang. Consequently, Ouyang is disqualified as a §103 reference. Accordingly, Applicants respectfully request the Examiner withdraw the §103 rejection of claims 27 and 37.

Ouyang in view of Yeo and Shimizu

Claim 43 was rejected under 35 U.S.C. §103 as being unpatentable over Ouyang in view of Yeo and Shimizu. However, submitted herewith is a signed declaration from inventors Shui-Ming Cheng, Ka-Hing Fung, Kuan Lun Cheng, and Yi-Ming Sheu, establishing invention and reduction to practice of the presently claimed subject matter prior to the filing date of Ouyang. Consequently, Ouyang is disqualified as a §103 reference. Accordingly, Applicants respectfully request the Examiner withdraw the §103 rejection of claim 43.

Dawson in view of Yeo

Claim 16

Claims 18-20, 25 and 26 were rejected under 35 U.S.C. §103 as being unpatentable over Dawson in view of Yeo. Applicant traverses this rejection on the grounds that these references are defective in establishing a *prima facie* case of obviousness with respect to claim 16, from which claims 18-20, 25 and 26 depend.

As the PTO recognizes in MPEP §2142:

*... The Examiner bears the initial burden of factually supporting any prima facie conclusion of obviousness. If the Examiner does not produce a prima facie case, the applicant is under no obligation to submit evidence of nonobviousness...*

It is submitted that, in the present case, the Examiner has not factually supported a *prima facie* case of obviousness for the following, mutually exclusive, reasons.

**1. Even When Combined, the References Do Not Teach the Claimed Subject Matter**

As provided in 35 U.S.C. §103:

*A patent may not be obtained ... if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which the subject matter pertains ... (Emphasis added)*

Thus, when evaluating a claim for determining obviousness, all limitations of the claim must be evaluated. However, in the context of claim 16, Dawson and Yeo each fail to teach an NMOS device and a PMOS device each located partially over a surface of a substrate, wherein a first one of the NMOS and PMOS devices includes first source/drain regions recessed within the substrate, and wherein a second one of the NMOS and PMOS devices includes second source/drain regions extending from the substrate. In contrast, contrary to the Examiner's position, Dawson merely discloses that the source/drain regions of the NMOS and PMOS devices are flush with the substrate, such that neither are recessed within the substrate nor extending from the substrate. Moreover, Yeo fails to cure these shortcomings of Dawson. Therefore, it is impossible for the combination of Dawson and Yeo to render obvious the subject matter of claim 16, as a whole, or its dependent claims, and the explicit terms of §103 cannot be met. Accordingly, Applicants respectfully request the Examiner withdraw the rejection.

**2. The Combination of References is Improper**

Assuming, arguendo, that none of the above arguments for non-obviousness apply (which is clearly not the case based on the above), there is still another, mutually exclusive, and compelling reason why Dawson and Yeo cannot be applied to reject any claim dependent upon claim 16 under 35 U.S.C. §103.

§2142 of the MPEP also provides:

*...the Examiner must step backward in time and into the shoes worn by the hypothetical 'person of ordinary skill in the art' when the invention was unknown and just before it was made.....The Examiner must put aside knowledge of the applicant's disclosure, refrain from using hindsight, and consider the subject matter claimed 'as a whole'.*

Here, neither Dawson nor Yeo teaches, or even suggests, the desirability of combination to arrive at an embodiment comprising an NMOS device and a PMOS device each located partially over a surface of a substrate, wherein a first one of the NMOS and PMOS devices includes first source/drain regions recessed within the substrate, and wherein a second one of the NMOS and PMOS devices includes second source/drain regions extending from the substrate, because neither reference teaches first source/drain regions recessed within the substrate and second source/drain regions extending from the substrate, as specified above and as claimed in claim 16. Thus, it is clear that neither reference provides any incentive or motivation supporting the desirability of the combination. Therefore, there is simply no basis in the art for combining the references to support a 35 U.S.C. §103 rejection.

In this context, the MPEP further provides at §2143.01:

*The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination.*

In the above context, the courts have repeatedly held that obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention where there exists no teaching, suggestion or incentive supporting the combination. Thus, in the present case it is clear that the combination of Dawson and Yeo can arise solely from hindsight based on the present application, because there is no showing, suggestion, incentive or motivation in either reference for the combination as applied to claim 16. Therefore, for this mutually exclusive reason, the Examiner's burden of factually supporting a *prima facie* case of obviousness has clearly not been met with respect to claim 16, and the rejection under 35 U.S.C. §103 of claims dependent upon claim 16 should be withdrawn.



Claim 28

Claims 29-31 and 36 were also rejected under 35 U.S.C. §103 as being unpatentable over Dawson in view of Yeo. Applicant traverses this rejection on the grounds that these references are defective in establishing a *prima facie* case of obviousness with respect to claim 28, from which claims 29-31 and 36 depend, for the following, mutually exclusive, reasons.

**1. Even When Combined, the References Do Not Teach the Claimed Subject Matter**

As provided above, when evaluating a claim for determining obviousness, all limitations of the claim must be evaluated. However, in the context of claim 28, Dawson and Yeo each fail to teach an NMOS device and a PMOS device each located partially over a surface of a substrate, wherein a first one of the NMOS and PMOS devices includes first source/drain regions recessed within the substrate, and wherein a second one of the NMOS and PMOS devices includes second source/drain regions extending from the substrate. In contrast, contrary to the Examiner's position, Dawson merely discloses that the source/drain regions of the NMOS and PMOS devices are flush with the substrate, such that neither are recessed within the substrate nor extending from the substrate. Moreover, Yeo fails to cure these shortcomings of Dawson. Therefore, it is impossible for the combination of Dawson and Yeo to render obvious the subject matter of claim 28, as a whole, or its dependent claims, and the explicit terms of §103 cannot be met. Accordingly, Applicants respectfully request the Examiner withdraw the rejection.

**2. The Combination of References is Improper**

Assuming, *arguendo*, that none of the above arguments for non-obviousness apply (which is clearly not the case based on the above), there is still another, mutually exclusive, and compelling reason why Dawson and Yeo cannot be applied to reject any claim dependent upon claim 28 under 35 U.S.C. §103. That is, neither Dawson nor Yeo teaches, or even suggests, the

desirability of combination to arrive at an embodiment comprising an NMOS device and a PMOS device each located partially over a surface of a substrate, wherein a first one of the NMOS and PMOS devices includes first source/drain regions recessed within the substrate, and wherein a second one of the NMOS and PMOS devices includes second source/drain regions extending from the substrate, because neither reference teaches first source/drain regions recessed within the substrate and second source/drain regions extending from the substrate, as specified above and as claimed in claim 28. Thus, it is clear that neither reference provides any incentive or motivation supporting the desirability of the combination. Therefore, there is simply no basis in the art for combining the references to support a 35 U.S.C. §103 rejection.

In this context, the courts have repeatedly held that obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention where there exists no teaching, suggestion or incentive supporting the combination. Thus, in the present case it is clear that the combination of Dawson and Yeo can arise solely from hindsight based on the present application, because there is no showing, suggestion, incentive or motivation in either reference for the combination as applied to claim 28. Therefore, for this mutually exclusive reason, the Examiner's burden of factually supporting a *prima facie* case of obviousness has clearly not been met with respect to claim 28, and the rejection under 35 U.S.C. §103 of claims dependent upon claim 28 should be withdrawn.

#### Bohr in view of Dawson

##### Claim 1

Claims 2-4, 13 and 14 were rejected under 35 U.S.C. §103 as being unpatentable over Bohr in view of Dawson. Applicant traverses this rejection on the grounds that these references are defective in establishing a *prima facie* case of obviousness with respect to claim 1, from which claims 2-4, 13 and 14 depend, for the following, mutually exclusive, reasons.

**1. Even When Combined, the References Do Not Teach the Claimed Subject Matter**

As provided above, when evaluating a claim for determining obviousness, all limitations of the claim must be evaluated. However, in the context of claim 1, Bohr and Dawson each fail to teach an NMOS device and a PMOS device each located partially over a surface of a substrate, wherein a first one of the NMOS and PMOS devices includes first source/drain regions recessed within the substrate, and wherein a second one of the NMOS and PMOS devices includes second source/drain regions extending from the substrate. In contrast, contrary to the Examiner's position, Dawson merely discloses that the source/drain regions of the NMOS and PMOS devices are flush with the substrate, such that neither are recessed within the substrate nor extending from the substrate, and Bohr merely discloses that the source/drain regions of only one of the NMOS and PMOS devices may extend above the substrate while the source/drain regions of the other of the NMOS and PMOS devices are flush with the substrate. Therefore, it is impossible for the combination of Bohr and Dawson to render obvious the subject matter of claim 1, as a whole, or its dependent claims, and the explicit terms of §103 cannot be met. Accordingly, Applicants respectfully request the Examiner withdraw the rejection.

**2. The Combination of References is Improper**

Assuming, *arguendo*, that none of the above arguments for non-obviousness apply (which is clearly not the case based on the above), there is still another, mutually exclusive, and compelling reason why Bohr and Dawson cannot be applied to reject any claim dependent upon claim 1 under 35 U.S.C. §103. That is, neither Bohr nor Dawson teaches, or even suggests, the desirability of combination to arrive at an embodiment comprising an NMOS device and a PMOS device each located partially over a surface of a substrate, wherein a first one of the NMOS and PMOS devices includes first source/drain regions recessed within the substrate, and wherein a second one of the NMOS and PMOS devices includes second source/drain regions extending from the substrate, because neither reference teaches first source/drain regions

recessed within the substrate and second source/drain regions extending from the substrate, as specified above and as claimed in claim 1. Thus, it is clear that neither reference provides any incentive or motivation supporting the desirability of the combination. Therefore, there is simply no basis in the art for combining the references to support a 35 U.S.C. §103 rejection.

In this context, the courts have repeatedly held that obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention where there exists no teaching, suggestion or incentive supporting the combination. Thus, in the present case it is clear that the combination of Bohr and Dawson can arise solely from hindsight based on the present application, because there is no showing, suggestion, incentive or motivation in either reference for the combination as applied to claim 1. Therefore, for this mutually exclusive reason, the Examiner's burden of factually supporting a *prima facie* case of obviousness has clearly not been met with respect to claim 1, and the rejection under 35 U.S.C. §103 of claims dependent upon claim 1 should be withdrawn.

#### Claim 16

Claims 16-22 and 24-27 were also rejected under 35 U.S.C. §103 as being unpatentable over Bohr in view of Dawson. Applicant traverses this rejection on the grounds that these references are defective in establishing a *prima facie* case of obviousness with respect to claim 16, for the following, mutually exclusive, reasons.

#### **1. Even When Combined, the References Do Not Teach the Claimed Subject Matter**

As provided above, when evaluating a claim for determining obviousness, all limitations of the claim must be evaluated. However, in the context of claim 16, Bohr and Dawson each fail to teach an NMOS device and a PMOS device each located partially over a surface of a substrate, wherein a first one of the NMOS and PMOS devices includes first source/drain regions recessed within the substrate, and wherein a second one of the NMOS and PMOS devices includes second source/drain regions extending from the substrate. In contrast, contrary

to the Examiner's position, Dawson merely discloses that the source/drain regions of the NMOS and PMOS devices are flush with the substrate, such that neither are recessed within the substrate nor extending from the substrate, and Bohr merely discloses that the source/drain regions of only one of the NMOS and PMOS devices may extend above the substrate while the source/drain regions of the other of the NMOS and PMOS devices are flush with the substrate. Therefore, it is impossible for the combination of Bohr and Dawson to render obvious the subject matter of claim 16, as a whole, or its dependent claims, and the explicit terms of §103 cannot be met. Accordingly, Applicants respectfully request the Examiner withdraw the rejection.

## **2. The Combination of References is Improper**

Assuming, *arguendo*, that none of the above arguments for non-obviousness apply (which is clearly not the case based on the above), there is still another, mutually exclusive, and compelling reason why Bohr and Dawson cannot be applied to reject claim 16, or claims dependent thereon, under 35 U.S.C. §103. That is, neither Bohr nor Dawson teaches, or even suggests, the desirability of combination to arrive at an embodiment comprising an NMOS device and a PMOS device each located partially over a surface of a substrate, wherein a first one of the NMOS and PMOS devices includes first source/drain regions recessed within the substrate, and wherein a second one of the NMOS and PMOS devices includes second source/drain regions extending from the substrate, because neither reference teaches first source/drain regions recessed within the substrate and second source/drain regions extending from the substrate, as specified above and as claimed in claim 16. Thus, it is clear that neither reference provides any incentive or motivation supporting the desirability of the combination. Therefore, there is simply no basis in the art for combining the references to support a 35 U.S.C. §103 rejection.

In this context, the courts have repeatedly held that obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention where there exists no teaching, suggestion or incentive supporting the combination. Thus, in the present case it is

clear that the combination of Bohr and Dawson can arise solely from hindsight based on the present application, because there is no showing, suggestion, incentive or motivation in either reference for the combination as applied to claim 16. Therefore, for this mutually exclusive reason, the Examiner's burden of factually supporting a *prima facie* case of obviousness has clearly not been met with respect to claim 16, and the rejection under 35 U.S.C. §103 of claims dependent upon claim 16 should be withdrawn.

#### Claim 28

Claims 28-33 and 35-37 were also rejected under 35 U.S.C. §103 as being unpatentable over Bohr in view of Dawson. Applicant traverses this rejection on the grounds that these references are defective in establishing a *prima facie* case of obviousness with respect to claim 28, for the following, mutually exclusive, reasons.

#### **1. Even When Combined, the References Do Not Teach the Claimed Subject Matter**

As provided above, when evaluating a claim for determining obviousness, all limitations of the claim must be evaluated. However, in the context of claim 28, Bohr and Dawson each fail to teach an NMOS device and a PMOS device each located partially over a surface of a substrate, wherein a first one of the NMOS and PMOS devices includes first source/drain regions recessed within the substrate, and wherein a second one of the NMOS and PMOS devices includes second source/drain regions extending from the substrate. In contrast, contrary to the Examiner's position, Dawson merely discloses that the source/drain regions of the NMOS and PMOS devices are flush with the substrate, such that neither are recessed within the substrate nor extending from the substrate, and Bohr merely discloses that the source/drain regions of only one of the NMOS and PMOS devices may extend above the substrate while the source/drain regions of the other of the NMOS and PMOS devices are flush with the substrate. Therefore, it is impossible for the combination of Bohr and Dawson to render obvious the subject matter of claim 28, as a whole, or its dependent claims, and the explicit terms of §103

cannot be met. Accordingly, Applicants respectfully request the Examiner withdraw the rejection.

## **2. The Combination of References is Improper**

Assuming, *arguendo*, that none of the above arguments for non-obviousness apply (which is clearly not the case based on the above), there is still another, mutually exclusive, and compelling reason why Bohr and Dawson cannot be applied to reject claim 28 or its dependent claims under 35 U.S.C. §103. That is, neither Bohr nor Dawson teaches, or even suggests, the desirability of combination to arrive at an embodiment comprising an NMOS device and a PMOS device each located partially over a surface of a substrate, wherein a first one of the NMOS and PMOS devices includes first source/drain regions recessed within the substrate, and wherein a second one of the NMOS and PMOS devices includes second source/drain regions extending from the substrate, because neither reference teaches first source/drain regions recessed within the substrate and second source/drain regions extending from the substrate, as specified above and as claimed in claim 28. Thus, it is clear that neither reference provides any incentive or motivation supporting the desirability of the combination. Therefore, there is simply no basis in the art for combining the references to support a 35 U.S.C. §103 rejection.

In this context, the courts have repeatedly held that obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention where there exists no teaching, suggestion or incentive supporting the combination. Thus, in the present case it is clear that the combination of Bohr and Dawson can arise solely from hindsight based on the present application, because there is no showing, suggestion, incentive or motivation in either reference for the combination as applied to claim 28. Therefore, for this mutually exclusive reason, the Examiner's burden of factually supporting a *prima facie* case of obviousness has clearly not been met with respect to claim 28, and the rejection under 35 U.S.C. §103 of claim 28 and its dependent claims should be withdrawn.

### Claim 38

Claims 40 and 41, which depend from claim 38, were also rejected under 35 U.S.C. §103 as being unpatentable over Bohr in view of Dawson. Applicant traverses this rejection on the grounds that these references are defective in establishing a *prima facie* case of obviousness with respect to claim 38, for the following, mutually exclusive, reasons.

**1. Even When Combined, the References Do Not Teach the Claimed Subject Matter**

As provided above, when evaluating a claim for determining obviousness, all limitations of the claim must be evaluated. However, in the context of claim 38, Bohr and Dawson each fail to teach an NMOS device and a PMOS device each located partially over a surface of a substrate, wherein a first one of the NMOS and PMOS devices includes first source/drain regions comprising SiC, and wherein a second one of the NMOS and PMOS devices includes second source/drain regions comprising SiGe. In contrast, Bohr discloses that the source/drain regions of one of the NMOS and PMOS devices can comprise either SiC or SiGe, and fails to disclose that the source/drain regions of the other NMOS or PMOS device can comprise the other of SiC or SiGe. Moreover, Dawson fails to cure these shortcomings of Bohr. Therefore, it is impossible for the combination of Bohr and Dawson to render obvious the subject matter of claim 38, as a whole, or its dependent claims, and the explicit terms of §103 cannot be met. Accordingly, Applicants respectfully request the Examiner withdraw the rejection.

**2. The Combination of References is Improper**

Assuming, *arguendo*, that none of the above arguments for non-obviousness apply (which is clearly not the case based on the above), there is still another, mutually exclusive, and compelling reason why Bohr and Dawson cannot be applied to reject claim 38 or its dependent claims under 35 U.S.C. §103. That is, neither Bohr nor Dawson teaches, or even suggests, the desirability of combination to arrive at an embodiment comprising an NMOS device and a PMOS device each located partially over a surface of a substrate, wherein a first one of the NMOS and PMOS devices includes first source/drain regions comprising SiC, and wherein a



second one of the NMOS and PMOS devices includes second source/drain regions comprising SiGe, because neither reference teaches first source/drain regions comprising SiC combined with second source/drain regions comprising SiGe, as specified above and as claimed in claim 38. Thus, it is clear that neither reference provides any incentive or motivation supporting the desirability of the combination. Therefore, there is simply no basis in the art for combining the references to support a 35 U.S.C. §103 rejection.

In this context, the courts have repeatedly held that obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention where there exists no teaching, suggestion or incentive supporting the combination. Thus, in the present case it is clear that the combination of Bohr and Dawson can arise solely from hindsight based on the present application, because there is no showing, suggestion, incentive or motivation in either reference for the combination as applied to claim 38. Therefore, for this mutually exclusive reason, the Examiner's burden of factually supporting a *prima facie* case of obviousness has clearly not been met with respect to claim 38, and the rejection under 35 U.S.C. §103 of claims dependent from claim 38 should be withdrawn.

#### Claim 44

Claims 45 and 46, which depend from claim 44, were also rejected under 35 U.S.C. §103 as being unpatentable over Bohr in view of Dawson. Applicant traverses this rejection on the grounds that these references are defective in establishing a *prima facie* case of obviousness with respect to claim 44, for the following, mutually exclusive, reasons.

#### **1. Even When Combined, the References Do Not Teach the Claimed Subject Matter**

As provided above, when evaluating a claim for determining obviousness, all limitations of the claim must be evaluated. However, in the context of claim 44, Bohr and Dawson each fail to teach an NMOS device and a PMOS device each located partially over a surface of a substrate, wherein a first one of the NMOS and PMOS devices includes first source/drain

regions recessed within the substrate, and wherein a second one of the NMOS and PMOS devices includes second source/drain regions extending from the substrate. In contrast, contrary to the Examiner's position, Dawson merely discloses that the source/drain regions of the NMOS and PMOS devices are flush with the substrate, such that neither are recessed within the substrate nor extending from the substrate, and Bohr merely discloses that the source/drain regions of only one of the NMOS and PMOS devices may extend above the substrate while the source/drain regions of the other of the NMOS and PMOS devices are flush with the substrate. Therefore, it is impossible for the combination of Bohr and Dawson to render obvious the subject matter of claim 44, as a whole, or its dependent claims, and the explicit terms of §103 cannot be met. Accordingly, Applicants respectfully request the Examiner withdraw the rejection.

## **2. The Combination of References is Improper**

Assuming, arguendo, that none of the above arguments for non-obviousness apply (which is clearly not the case based on the above), there is still another, mutually exclusive, and compelling reason why Bohr and Dawson cannot be applied to reject claim 44 or its dependent claims under 35 U.S.C. §103. That is, neither Bohr nor Dawson teaches, or even suggests, the desirability of combination to arrive at an embodiment comprising an NMOS device and a PMOS device each located partially over a surface of a substrate, wherein a first one of the NMOS and PMOS devices includes first source/drain regions recessed within the substrate, and wherein a second one of the NMOS and PMOS devices includes second source/drain regions extending from the substrate, because neither reference teaches first source/drain regions recessed within the substrate and second source/drain regions extending from the substrate, as specified above and as claimed in claim 44. Thus, it is clear that neither reference provides any incentive or motivation supporting the desirability of the combination. Therefore, there is simply no basis in the art for combining the references to support a 35 U.S.C. §103 rejection.

In this context, the courts have repeatedly held that obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention where there exists no

teaching, suggestion or incentive supporting the combination. Thus, in the present case it is clear that the combination of Bohr and Dawson can arise solely from hindsight based on the present application, because there is no showing, suggestion, incentive or motivation in either reference for the combination as applied to claim 44. Therefore, for this mutually exclusive reason, the Examiner's burden of factually supporting a *prima facie* case of obviousness has clearly not been met with respect to claim 44, and the rejection under 35 U.S.C. §103 of claims dependent from claim 44 should be withdrawn.

Bohr in view of Dawson and Biebl

Claim 1

Claim 10, which depends from claim 1, was rejected under 35 U.S.C. §103 as being unpatentable over Bohr in view of Dawson and further in view of Biebl. Applicant traverses this rejection on the grounds that these references are defective in establishing a *prima facie* case of obviousness with respect to claim 1, from which claim 10 depends, for the following, mutually exclusive, reasons.

**1. Even When Combined, the References Do Not Teach the Claimed Subject Matter**

As provided above, when evaluating a claim for determining obviousness, all limitations of the claim must be evaluated. However, in the context of claim 1, Bohr, Dawson and Biebl each fail to teach an NMOS device and a PMOS device each located partially over a surface of a substrate, wherein a first one of the NMOS and PMOS devices includes first source/drain regions recessed within the substrate, and wherein a second one of the NMOS and PMOS devices includes second source/drain regions extending from the substrate. In contrast, contrary to the Examiner's position, Dawson merely discloses that the source/drain regions of the NMOS and PMOS devices are flush with the substrate, such that neither are recessed within the substrate nor extending from the substrate, and Bohr merely discloses that the source/drain regions of only one of the NMOS and PMOS devices may extend above the substrate while the

source/drain regions of the other of the NMOS and PMOS devices are flush with the substrate. Moreover, Biebl fails to cure these shortcomings of Bohr and Dawson. Therefore, it is impossible for the combination of Bohr, Dawson and Biebl to render obvious the subject matter of claim 1, as a whole, or its dependent claims, and the explicit terms of §103 cannot be met. Accordingly, Applicants respectfully request the Examiner withdraw the rejection.

## **2. The Combination of References is Improper**

Assuming, *arguendo*, that none of the above arguments for non-obviousness apply (which is clearly not the case based on the above), there is still another, mutually exclusive, and compelling reason why Bohr, Dawson and Biebl cannot be applied to reject any claim dependent upon claim 1 under 35 U.S.C. §103. That is, neither Bohr, Dawson nor Beibl teaches, or even suggests, the desirability of combination to arrive at an embodiment comprising an NMOS device and a PMOS device each located partially over a surface of a substrate, wherein a first one of the NMOS and PMOS devices includes first source/drain regions recessed within the substrate, and wherein a second one of the NMOS and PMOS devices includes second source/drain regions extending from the substrate, because neither reference teaches first source/drain regions recessed within the substrate and second source/drain regions extending from the substrate, as specified above and as claimed in claim 1. Thus, it is clear that neither reference provides any incentive or motivation supporting the desirability of the combination. Therefore, there is simply no basis in the art for combining the references to support a 35 U.S.C. §103 rejection.

In this context, the courts have repeatedly held that obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention where there exists no teaching, suggestion or incentive supporting the combination. Thus, in the present case it is clear that the combination of Bohr, Dawson and Biebl can arise solely from hindsight based on the present application, because there is no showing, suggestion, incentive or motivation in either reference for the combination as applied to claim 1. Therefore, for this mutually exclusive reason, the Examiner's burden of factually supporting a *prima facie* case of obviousness has

clearly not been met with respect to claim 1, and the rejection under 35 U.S.C. §103 of claims dependent upon claim 1 should be withdrawn.

### Claim 16

Claim 23, which depends from claim 16, was also rejected under 35 U.S.C. §103 as being unpatentable over Bohr in view of Dawson and Biebl. Applicant traverses this rejection on the grounds that these references are defective in establishing a *prima facie* case of obviousness with respect to claim 16, for the following, mutually exclusive, reasons.

#### **1. Even When Combined, the References Do Not Teach the Claimed Subject Matter**

As provided above, when evaluating a claim for determining obviousness, all limitations of the claim must be evaluated. However, in the context of claim 16, Bohr, Dawson and Biebl each fail to teach an NMOS device and a PMOS device each located partially over a surface of a substrate, wherein a first one of the NMOS and PMOS devices includes first source/drain regions recessed within the substrate, and wherein a second one of the NMOS and PMOS devices includes second source/drain regions extending from the substrate. In contrast, contrary to the Examiner's position, Dawson merely discloses that the source/drain regions of the NMOS and PMOS devices are flush with the substrate, such that neither are recessed within the substrate nor extending from the substrate, and Bohr merely discloses that the source/drain regions of only one of the NMOS and PMOS devices may extend above the substrate while the source/drain regions of the other of the NMOS and PMOS devices are flush with the substrate. Moreover, Biebl fails to cure these shortcomings of Bohr and Dawson. Therefore, it is impossible for the combination of Bohr, Dawson and Biebl to render obvious the subject matter of claim 16, as a whole, or its dependent claims, and the explicit terms of §103 cannot be met. Accordingly, Applicants respectfully request the Examiner withdraw the rejection.

#### **2. The Combination of References is Improper**

Assuming, *arguendo*, that none of the above arguments for non-obviousness apply (which is clearly not the case based on the above), there is still another, mutually exclusive, and compelling reason why Bohr, Dawson and Biebl cannot be applied to reject claim 16, or claims dependent thereon, under 35 U.S.C. §103. That is, neither Bohr, Dawson nor Biebl teaches, or even suggests, the desirability of combination to arrive at an embodiment comprising an NMOS device and a PMOS device each located partially over a surface of a substrate, wherein a first one of the NMOS and PMOS devices includes first source/drain regions recessed within the substrate, and wherein a second one of the NMOS and PMOS devices includes second source/drain regions extending from the substrate, because neither reference teaches first source/drain regions recessed within the substrate and second source/drain regions extending from the substrate, as specified above and as claimed in claim 16. Thus, it is clear that neither reference provides any incentive or motivation supporting the desirability of the combination. Therefore, there is simply no basis in the art for combining the references to support a 35 U.S.C. §103 rejection.

In this context, the courts have repeatedly held that obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention where there exists no teaching, suggestion or incentive supporting the combination. Thus, in the present case it is clear that the combination of Bohr, Dawson and Biebl can arise solely from hindsight based on the present application, because there is no showing, suggestion, incentive or motivation in either reference for the combination as applied to claim 16. Therefore, for this mutually exclusive reason, the Examiner's burden of factually supporting a *prima facie* case of obviousness has clearly not been met with respect to claim 16, and the rejection under 35 U.S.C. §103 of claims dependent upon claim 16 should be withdrawn.

#### Claim 28

Claim 34, which depends from claim 28, was also rejected under 35 U.S.C. §103 as being unpatentable over Bohr in view of Dawson and Biebl. Applicant traverses this rejection on the grounds that these references are defective in establishing a *prima facie* case of obviousness with

respect to claim 28, for the following, mutually exclusive, reasons.

**1. Even When Combined, the References Do Not Teach the Claimed Subject Matter**

As provided above, when evaluating a claim for determining obviousness, all limitations of the claim must be evaluated. However, in the context of claim 28, Bohr, Dawson and Biebl each fail to teach an NMOS device and a PMOS device each located partially over a surface of a substrate, wherein a first one of the NMOS and PMOS devices includes first source/drain regions recessed within the substrate, and wherein a second one of the NMOS and PMOS devices includes second source/drain regions extending from the substrate. In contrast, contrary to the Examiner's position, Dawson merely discloses that the source/drain regions of the NMOS and PMOS devices are flush with the substrate, such that neither are recessed within the substrate nor extending from the substrate, and Bohr merely discloses that the source/drain regions of only one of the NMOS and PMOS devices may extend above the substrate while the source/drain regions of the other of the NMOS and PMOS devices are flush with the substrate. Moreover, Biebl fails to cure these shortcomings of Bohr and Dawson. Therefore, it is impossible for the combination of Bohr, Dawson and Biebl to render obvious the subject matter of claim 28, as a whole, or its dependent claims, and the explicit terms of §103 cannot be met. Accordingly, Applicants respectfully request the Examiner withdraw the rejection.

**2. The Combination of References is Improper**

Assuming, arguendo, that none of the above arguments for non-obviousness apply (which is clearly not the case based on the above), there is still another, mutually exclusive, and compelling reason why Bohr, Dawson and Biebl cannot be applied to reject claim 28 or its dependent claims under 35 U.S.C. §103. That is, neither Bohr, Dawson nor Biebl teaches, or even suggests, the desirability of combination to arrive at an embodiment comprising an NMOS device and a PMOS device each located partially over a surface of a substrate, wherein a first one of the NMOS and PMOS devices includes first source/drain regions recessed within the

substrate, and wherein a second one of the NMOS and PMOS devices includes second source/drain regions extending from the substrate, because neither reference teaches first source/drain regions recessed within the substrate and second source/drain regions extending from the substrate, as specified above and as claimed in claim 28. Thus, it is clear that neither reference provides any incentive or motivation supporting the desirability of the combination. Therefore, there is simply no basis in the art for combining the references to support a 35 U.S.C. §103 rejection.

In this context, the courts have repeatedly held that obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention where there exists no teaching, suggestion or incentive supporting the combination. Thus, in the present case it is clear that the combination of Bohr, Dawson and Biebl can arise solely from hindsight based on the present application, because there is no showing, suggestion, incentive or motivation in either reference for the combination as applied to claim 28. Therefore, for this mutually exclusive reason, the Examiner's burden of factually supporting a *prima facie* case of obviousness has clearly not been met with respect to claim 28, and the rejection under 35 U.S.C. §103 of claim 28 and its dependent claims should be withdrawn.

#### Bohr in view of Wuu

##### Claim 47

Claim 47 was rejected under 35 U.S.C. §103 as being unpatentable over Bohr in view of Wuu. Applicant traverses this rejection on the grounds that these references are defective in establishing a *prima facie* case of obviousness with respect to claim 47 for the following, mutually exclusive, reasons.

#### **1. Even When Combined, the References Do Not Teach the Claimed Subject Matter**

As provided above, when evaluating a claim for determining obviousness, all limitations of the claim must be evaluated. However, in the context of claim 47, Bohr and Wuu each fail to



teach an NMOS device and a PMOS device each located partially over a surface of a substrate, wherein a first one of the NMOS and PMOS devices includes first source/drain regions recessed within the substrate, and wherein a second one of the NMOS and PMOS devices includes second source/drain regions extending from the substrate. In contrast, contrary to the Examiner's position, Bohr merely discloses that the source/drain regions of only one of the NMOS and PMOS devices may extend above the substrate while the source/drain regions of the other of the NMOS and PMOS devices are flush with the substrate. Moreover, Wu fails to cure these shortcomings of Bohr. Therefore, it is impossible for the combination of Bohr and Wu to render obvious the subject matter of claim 47, as a whole, and the explicit terms of §103 cannot be met. Accordingly, Applicants respectfully request the Examiner withdraw the rejection.

## **2. The Combination of References is Improper**

Assuming, *arguendo*, that none of the above arguments for non-obviousness apply (which is clearly not the case based on the above), there is still another, mutually exclusive, and compelling reason why Bohr and Wu cannot be applied to reject claim 47 under 35 U.S.C. §103. That is, neither Bohr nor Wu teaches, or even suggests, the desirability of combination to arrive at an embodiment comprising an NMOS device and a PMOS device each located partially over a surface of a substrate, wherein a first one of the NMOS and PMOS devices includes first source/drain regions recessed within the substrate, and wherein a second one of the NMOS and PMOS devices includes second source/drain regions extending from the substrate, because neither reference teaches first source/drain regions recessed within the substrate and second source/drain regions extending from the substrate, as specified above and as claimed in claim 47. Thus, it is clear that neither reference provides any incentive or motivation supporting the desirability of the combination. Therefore, there is simply no basis in the art for combining the references to support a 35 U.S.C. §103 rejection.

In this context, the courts have repeatedly held that obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention where there exists no teaching, suggestion or incentive supporting the combination. Thus, in the present case it is

clear that the combination of Bohr and Wuu can arise solely from hindsight based on the present application, because there is no showing, suggestion, incentive or motivation in either reference for the combination as applied to claim 47. Therefore, for this mutually exclusive reason, the Examiner's burden of factually supporting a *prima facie* case of obviousness has clearly not been met with respect to claim 47, and the rejection under 35 U.S.C. §103 of claim 47 should be withdrawn.

Bohr in view of Wuu and Dawson

Claim 47

Claims 48 and 49, which depend from claim 47, were rejected under 35 U.S.C. §103 as being unpatentable over Bohr in view of Wuu and further in view of Dawson. Applicant traverses this rejection on the grounds that these references are defective in establishing a *prima facie* case of obviousness with respect to claim 47 for the following, mutually exclusive, reasons.

**1. Even When Combined, the References Do Not Teach the Claimed Subject Matter**

As provided above, when evaluating a claim for determining obviousness, all limitations of the claim must be evaluated. However, in the context of claim 47, Bohr and Wuu each fail to teach an NMOS device and a PMOS device each located partially over a surface of a substrate, wherein a first one of the NMOS and PMOS devices includes first source/drain regions recessed within the substrate, and wherein a second one of the NMOS and PMOS devices includes second source/drain regions extending from the substrate. In contrast, contrary to the Examiner's position, Bohr merely discloses that the source/drain regions of only one of the NMOS and PMOS devices may extend above the substrate while the source/drain regions of the other of the NMOS and PMOS devices are flush with the substrate. Moreover, Wuu and Dawson fail to cure these shortcomings of Bohr. Therefore, it is impossible for the combination of Bohr, Wuu and Dawson to render obvious the subject matter of claim 47, as a whole, and its dependent claims, and the explicit terms of §103 cannot be met. Accordingly, Applicants respectfully request the

Examiner withdraw the rejection.

## **2. The Combination of References is Improper**

Assuming, *arguendo*, that none of the above arguments for non-obviousness apply (which is clearly not the case based on the above), there is still another, mutually exclusive, and compelling reason why Bohr and Wuu cannot be applied to reject claim 48 and 49 under 35 U.S.C. §103. That is, neither Bohr, Wuu nor Dawson teaches, or even suggests, the desirability of combination to arrive at an embodiment comprising an NMOS device and a PMOS device each located partially over a surface of a substrate, wherein a first one of the NMOS and PMOS devices includes first source/drain regions recessed within the substrate, and wherein a second one of the NMOS and PMOS devices includes second source/drain regions extending from the substrate, because neither reference teaches first source/drain regions recessed within the substrate and second source/drain regions extending from the substrate, as specified above and as claimed in claim 47, from which claims 48 and 49 depend. Thus, it is clear that neither reference provides any incentive or motivation supporting the desirability of the combination. Therefore, there is simply no basis in the art for combining the references to support a 35 U.S.C. §103 rejection.

In this context, the courts have repeatedly held that obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention where there exists no teaching, suggestion or incentive supporting the combination. Thus, in the present case it is clear that the combination of Bohr, Wuu and Dawson can arise solely from hindsight based on the present application, because there is no showing, suggestion, incentive or motivation in either reference for the combination as applied to claim 47. Therefore, for this mutually exclusive reason, the Examiner's burden of factually supporting a *prima facie* case of obviousness has clearly not been met with respect to claim 47, and the rejection under 35 U.S.C. §103 of claims dependent from claim 47 should be withdrawn.

**Conclusion**

All matters set forth in the Office Action have been addressed. Accordingly, it is believed that all claims are in condition for allowance. Favorable consideration and an early indication of allowability are respectfully requested.

Should the Examiner deem that an interview with Applicants' undersigned attorney would expedite consideration, the Examiner is invited to call the undersigned attorney at the telephone number indicated below.

Respectfully submitted,



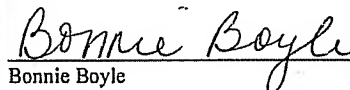
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Bonnie Boyle